The Department Of Energy Technical Standards Program
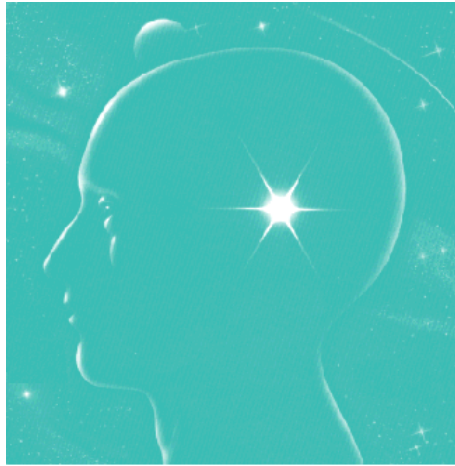
Program Tutorial

The DOE Technical Standards Program: Program Tutorial

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Instructional Goals

- **Provide an understanding of the Department Of Energy (DOE) Technical Standards Program (TSP)**
- **Provide an overview of the DOE system of documents**
- **Facilitate involvement in developing, reviewing, and/or applying technical standards in support of the DOE's missions and programs**

- Comments (e.g., expanded definitions and process descriptions, additional clarifying text material, etc.) on this tutorial are requested from class participants.

Why This Tutorial?

- **To promote awareness of the DOE Technical Standards Program, including…**

  ☞ the role of technical standards in the DOE document hierarchy

  ☞ use of voluntary consensus standards (non-Government standards)

  ☞ resources provided by the Technical Standards Program Office (TSPO)
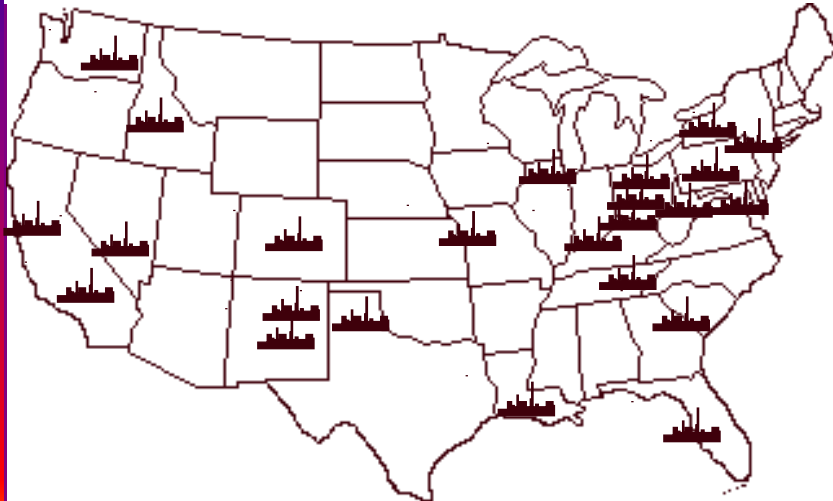
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- This tutorial is intended to encourage and promote a strategic approach to standards management and standardization activities within DOE, including a common understanding of Federal and Department policy and guidance on (1) the identification, development, use, and maintenance of technical standards, and (2) participation in voluntary consensus standards (non-Government standards) activities.

Selected Topics To Be Covered During This Tutorial

- **What are DOE Technical Standards?**
- **Why have a Technical Standards Program?**
- **How does the the Technical Standards Program work?**
- **What does the Technical Standards Program do?**
  - ☞Policy and Program Development
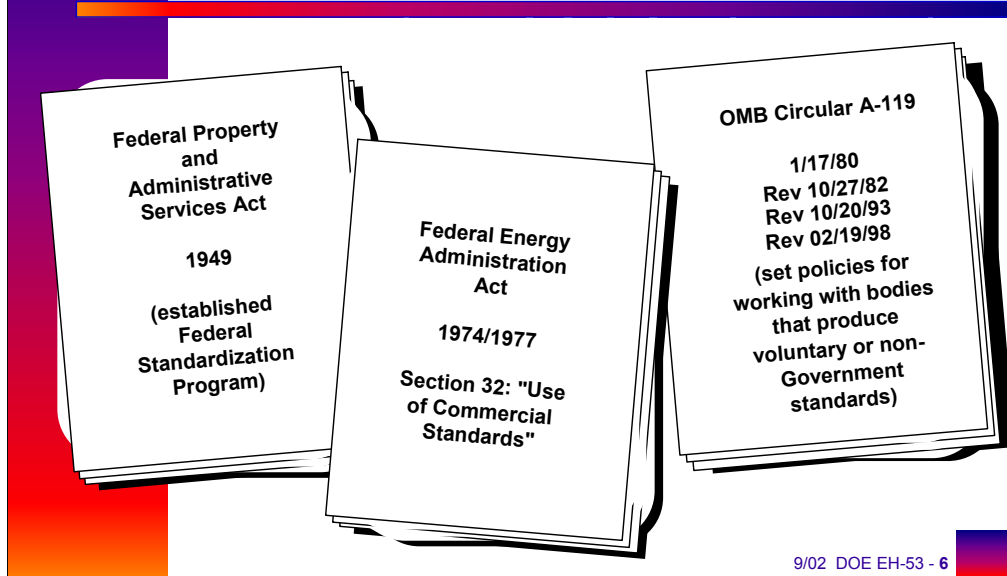 - ☞Technical Services
  - ☞Communications and Outreach

Historically, DOE Sites Independently Developed Practices and Procedures

- As a general rule, DOE and its predecessor organizations [i.e., the Atomic Energy Commission (AEC) and the Energy Research and Development Administration (ERDA)] allowed its various field offices and site organizations to execute their individual facility/site missions and activities in a fairly autonomous manner (i.e., independent of each other). This was considered to be reasonable in light of the necessary security restrictions.

- This approach to business meant that each site focused on developing its own practices and procedures for managing its work. In some cases, sites adopted technical standards and standardization documents from their parent M&O organizations. In other cases, sites did not adopt any standardization documents, but relied on individual activities (and available local subject matter experts) to decide the best way to perform work.

- Example - Savannah River. DuPont managed the site using approximately 2800 company standards with little direct reference to voluntary consensus standards (non-Government standards) [some company standards did make reference to voluntary consensus standards]. Subsequently, Westinghouse replaced many of the DuPont standards with voluntary consensus standards. Initially, the number of standards was reduced to around 600; subsequent efforts were successful in reducing the number of standards referenced to about 100.

- Also, DOE-HQ would, in some instances, recommend or mandate specific technical standards for use by the DOE sites (examples: endorsement of ASME NQA-1 in Order 5700.6C and references to mandatory standards in Order 5480.4). While many of the old 4-digit series of DOE Orders have been canceled at DOE-HQ, a number of them remain in effect at some DOE sites through reference in contracts or Standards/Requirements Identification Documents (S/RIDs).
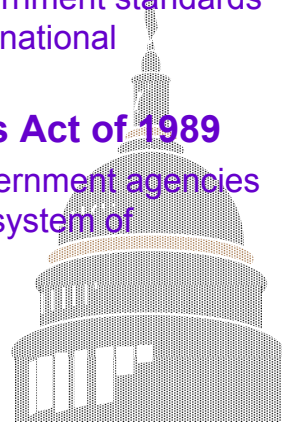
The Drive Toward Standardization Has Gathered Momentum Since 1949

Federal Property and Administrative Services Act

1949

(established Federal Standardization Program)

Federal Energy Administration Act

1974/1977

Section 32: "Use of Commercial Standards"

OMB Circular A-119

1/17/80
Rev 10/27/82
Rev 10/20/93
Rev 02/19/98
(set policies for working with bodies that produce voluntary or non-Government standards)

- The Federal Government recognized the need for and value of standardizing technical practices as far back as 1949. The following documents are representative of this trend:

  - Federal Property and Administrative Act of 1949 (since amended) - established the General Services Administration (GSA) and authorized the GSA to establish standardized procedures for use by all agencies. This authority enabled the GSA to establish the Federal Standardization Program. The DOE Technical Standards Program complies with the GSA program.

  - Federal Energy Administration Act of 1974 (150.S.C.761) as amended by Public Law (PL) 95-70, 7/21/77, which added Section 32, "Use of Commercial Standards." Section 32 sets forth conditions for using voluntary consensus standards (non-Government standards) [applies only to those parts of the DOE that originated in the ERDA].

  - Office of Management and Budget (OMB) Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities* **(latest revision dated February 19, 1998**), establishes policies for all Federal agencies to use external (i.e., voluntary consensus or non-Government) standards in lieu of internal (i.e., Department) standards and to participate in the development of voluntary consensus standards consistent with the missions and activities of the individual agencies.

Other Standards-Related Milestones

- **Trade Act of 1979**
  - ☞ Established the use of non-Government standards as national policy (including international standards)
- **International Competitiveness Act of 1989**
  - ☞ Established policy that U.S. Government agencies would adopt and use the metric system of international measurements

Other Standards-Related Milestones

- **Executive Order 12770, July 25, 1991**
  - ☞ Directed Federal agencies to implement the metric system
- **National Technology Transfer and Advancement Act of 1995**
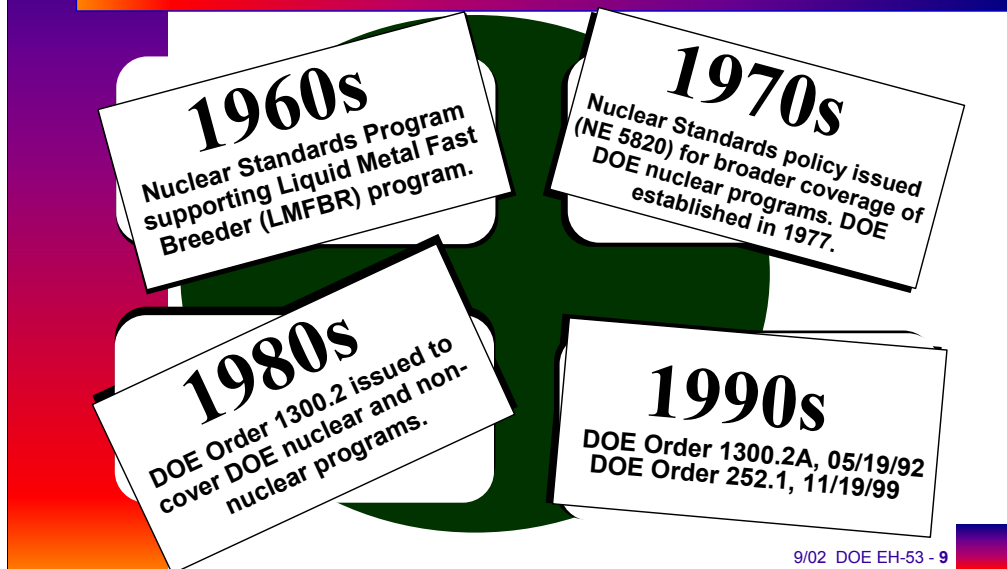 - ☞ Requires Federal agencies to use voluntary consensus standards to carry out policy objectives or activities

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Other Standards-Related Milestones

- The National Technology Transfer and Advancement Act of 1995 (also known as Public Law 104-113; signed by President Clinton on March 7, 1996) codifies and expands the existing standards management policy in OMB Circular A-119.
- The updated version of OMB Circular A-119 (issued on February 19, 1998) implements the changes in Federal standards management policy based on Public Law 104-113.
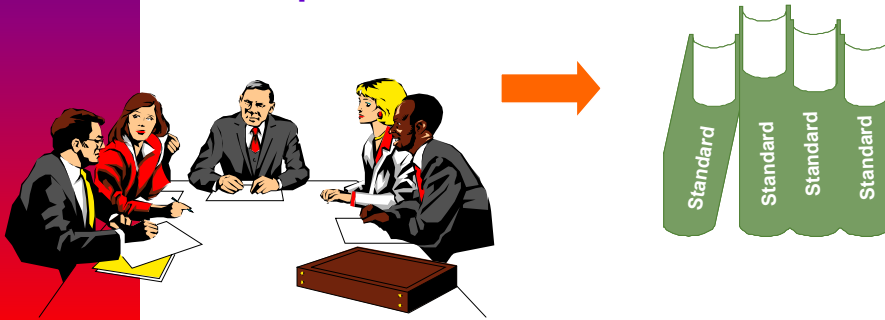
DOE Has A Long History With Document Standardization Programs

1960s Nuclear Standards Program supporting Liquid Metal Fast Breeder (LMFBR) program.

1970s Nuclear Standards policy issued (NE 5820) for broader coverage of DOE nuclear programs. DOE established in 1977.

1980s DOE Order 1300.2 issued to cover DOE nuclear and non-nuclear programs.

1990s DOE Order 1300.2A, 05/19/92 DOE Order 252.1, 11/19/99

- DOE (including its predecessor organizations) has been involved in standardization and standards management efforts for more than 30 years. A chronology of events is depicted above and described below.

- Standardization approaches and technical standards development were actively pursued as part of the Liquid Metal Fast Breeder Reactor (LMFBR) Program beginning in the 1960s. As this effort continued through the 1970s, the standards management policy and requirements for the LMFBR Program were expanded (through Order NE 5820) to cover all DOE nuclear programs. The DOE policy was subsequently extended to all DOE programs (except for the Naval Nuclear Propulsion Program) through the issuance of Order 1300.2, *Department of Energy Standards Program*. The standards management policy outlined in DOE 1300.2 was consistent with the Federal-level policy established in 1982 through OMB Circular A-119.

- Through the 1980s, implementation of DOE 1300.2 was effectively limited to the DOE nuclear program. Consequently, with the termination of the LMBFR Program, management support for the standards management policy waned. This lack of support was evidenced by findings and recommendations from internal [post-Three Mile Island (TMI) assessment of DOE reactors and HQ-led standards program site assessments] and external (National Bureau of Standards and National Academy of Sciences) reviews.

- The findings and recommendations were reaffirmed in the reviews leading to Defense Nuclear Facilities Safety Board (DNFSB) Recommendations 90-2 and 91-1. Subsequent to these recommendations, DOE management renewed its commitment to the long-standing standards management policy through increased management attention and an updated revision to DOE 1300.2 (Order 1300.2A, *Department of Energy Technical Standards Program*). DOE 1300.2A has since been replaced by Order DOE O 252.1, *Technical Standards Program* and Guide DOE G 252.1-1, *Technical Standards Program Guide,* both dated November 19, 1999.
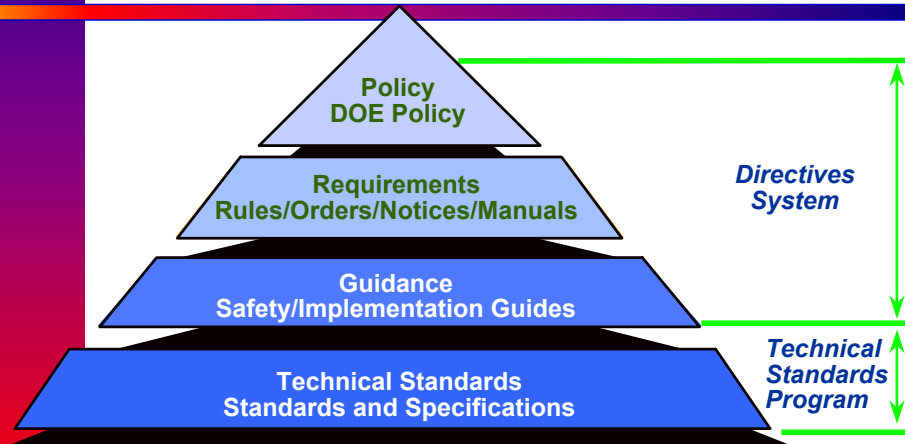
DOE Technical Standards Program

The Department is continuing its transition from expert-based operations to standards-based operations.

- The issues addressed in the DNFSB Recommendations noted on the previous overhead applied not only to identifying and using appropriate technical standards, but to all "standards" activities (including the Department's Orders system).

- The issues were particularly germane with the end of the Cold War and the beginning transition of DOE's primary missions and activities from nuclear weapons development and maintenance to environmental clean-up and restoration. With the changing times, many "subject matter experts" representing a vast knowledge base of facility and process operations began to leave (through retirement, death, and/or employment termination). This trend in the loss of "corporate memory" is continuing into the 21st century. As such, new priorities emerged for establishing the Departmental infrastructure needed to move from an "expert-based" operations culture (rooted in individual expertise and knowledge) to an operations culture founded on the proper selection, use, and maintenance of standards. Such an operations culture is consistent with and supportive of the concepts of "Integrated Safety Management" and "Integrated Safeguards and Security Management" now endorsed by the senior management of the DOE and the National Nuclear Security Administration (NNSA).

- The Technical Standards Program is one of a number of important elements of the Department's infrastructure supporting this continuing transition in operations culture.

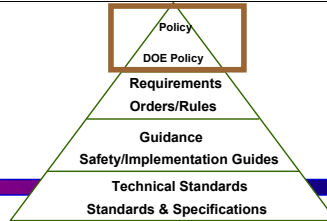## DOE's Tiered, Structured System for Definition of Requirements

Policy
DOE Policy

Requirements
Rules/Orders/Notices/Manuals

Guidance
Safety/Implementation Guides

Technical Standards
Standards and Specifications

Directives System

Technical Standards Program

The hierarchy of directives and related documents is viewed as a family of standards.

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- Since the early 1990s, DOE has continued to build and implement the organizational and process infrastructure needed to make the transition to a standards-based operations culture a reality.
- The Department's tiered system of requirements-related documents [effected through the Directives System (described in P 251.1, M 251.1-1A, and O 251.1-1A) and the Technical Standards Program] is an excellent example of this infrastructure and its linkages, recognizing that all documents in the hierarchy represent a "family" of standards.
- The following overheads provide a brief overview of this hierarchy of documents and their role in supporting an operations culture based on the use of standards.
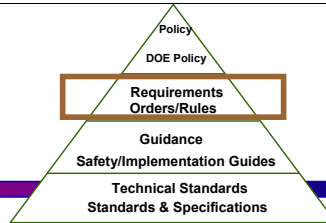
Policy

Policy
DOE Policy
Requirements
Orders/Rules
Guidance
Safety/Implementation Guides
Technical Standards
Standards & Specifications

- **Policy documents describe the philosophy and fundamental values of the Department-- the "why we do it" statements.**

- **All requirements and guidance flow from, and must be consistent with, policy.**

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- Key document related to the Technical Standards Program:
    - DOE P 251.1, *Directives System Policy*

Requirements

Policy
DOE Policy

Requirements
Orders/Rules

Guidance
Safety/Implementation Guides

Technical Standards
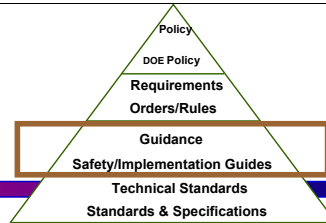Standards & Specifications

- **Requirements documents, such as orders and rules, describe "what must be done."**

- **These documents set expectations that must be met to ensure safe and reliable facility operations and conduct procurement.**

- **They do not provide information on how to do work.**

- Key documents related to the Technical Standards Program:
  - DOE M 251.1-1A, *Directives System Manual*
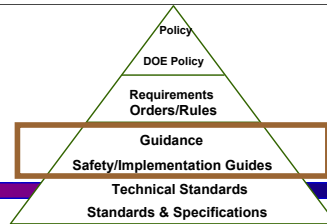 - DOE O 252.1, *Technical Standards Program*

Guidance

- **Guidance documents (safety and implementation guides) provide general information and methodologies that DOE finds acceptable to meet the Department's requirements.**

- **In practice, the safety and implementation guides provide a link between the requirements and technical standards.**

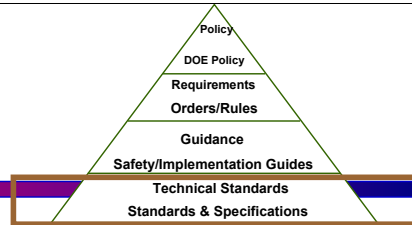- Key document related to the Technical Standards Program:
  - DOE G 252.1-1, *Technical Standards Program Guide*

Guidance (cont.)

Policy
DOE Policy
Requirements
Orders/Rules
Guidance
Safety/Implementation Guides
Technical Standards
Standards & Specifications

- **Issued to provide guidance…**
  - ☞ on acceptable methods for implementing rules and orders
  - ☞ in delineating DOE's techniques for evaluating problems and events
- **May reference technical standards**
- **Not a substitute for rules or orders**
- **Provide a bridge between requirements and technical standards**

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Technical Standards

Policy
DOE Policy
Requirements
Orders/Rules
Guidance
Safety/Implementation Guides
Technical Standards
Standards & Specifications

- Technical standards provide specific methods and techniques on "how to" implement the Department's requirements.

- Technical standards are the foundation upon which the DOE documents hierarchy is based.

- Currently, DOE uses "category-based" reporting for procurement per Office of Management and Budget (OMB) Circular A-119.

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What Are Technical Standards?

- **Definitions consistent with Public Law (PL) 104-113 and OMB Circular A-119**

- **Uses**

- **Methods and techniques**

- **Not mandatory unless compliance is required in a policy or requirement document and cited by contract**

What are Technical Standards?

- Technical standards definitions are consistent with PL 104-113 and OMB Circular A-119.

- Uses - Technical standards are used to transfer technology and standardize work processes to produce consistent, acceptable results. They provide specific methods and techniques on "how to" implement DOE's requirements.

- The methods and techniques addressed in technical standards involve a range of activities, including the following: (1) common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices, and (2) the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength. (Note - this description is consistent with the information provided in the February 1998 revision to OMB Circular A-119.)

- Technical standards are not mandatory unless compliance is required in a policy or requirement document (e.g., orders and rules) and cited by contract.

Technical Standards Are Needed When...

- There are multiple applications of the process

- The product or technology is mature and stable

- The process is repetitive and lends itself to standardization (e.g., maintenance)

- Application of the standard will result in improved economy of scale

- The standard provides information on how to implement Departmental requirements

- The standard contributes to the uniformity of facility operations

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Standards needs can be

- Technical
- Management
- Procurement

Sources of Technical Standards

- **Voluntary Consensus Standards (Non-Government Standards)**

- **Consortia Standards**

- **Government**

- **Department**

Sources of Technical Standards

- Voluntary Consensus Standards (Non-Government Standards)
    - •International (ISO, IEC, etc.)
    - •Foreign/Regional (BSI, DIN, etc.)
    - •National (ANSI, ASTM, IEEE, ANS, ASME, etc.)
- Consortia Standards are developed by industry groups, most commonly in the information technology area. Some examples are HTML, USB, ITP, and JGEG.
- Government [includes Federal-level (GSA) documents, such as Commercial Item Descriptions (CIDs) and other agency-specific documents (Department of Defense, etc.)]
- Department (DOE Technical Standards, Specifications, Handbooks, and Technical Standards Lists)
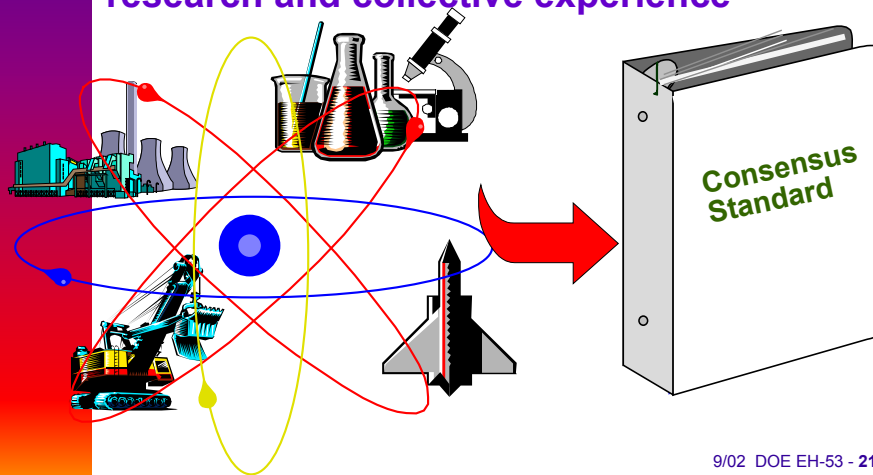
Voluntary Consensus Standards (VCSs)

- **Those standards that are established by international/national consensus bodies and technical/professional societies**
- **Also referred to as "non-Government standards" (NGSs) or "commercial standards"**
- **Do not include professional standards of personal conduct, or private standards of individual firms, or of individual organizations for their internal use**

Voluntary Consensus Standards

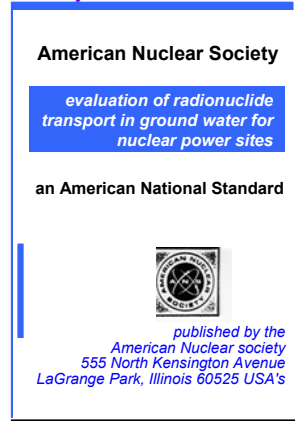**Proven solutions to problems based on research and collective experience**

Consensus Standard

- Voluntary consensus standards represent the collective experience of many individuals and organizations in discovering through experience and research what works in solving typical problems and preventing their recurrence. Many of these standards have potential application to DOE.
- Rather than trying to "reinvent the wheel," DOE needs to tap into this existing body of experience and knowledge when the need for a technical standard is identified.

DOE Uses Voluntary Consensus Standards...

- Directly in acquisition documents: Federal Acquisition Regulations (FARs)

- As references in other documents

- As design or reference documents

- By excerpting direct language (with proper referencing)

American Nuclear Society

evaluation of radionuclide transport in ground water for nuclear power sites

an American National Standard

published by the American Nuclear society 555 North Kensington Avenue LaGrange Park, Illinois 60525 USA's

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- It is important to recognize that in situations where language from voluntary consensus standards is incorporated directly into organizational or site guidance documents; copyright protection issues must be addressed.

Adopting Voluntary Consensus Standards

- **Adoption: an "expression of acceptance… for use by DOE"**

- **VCSs referenced in DOE directives, contracts, sets of "work smart" standards, standards/requirements identification documents (S/RIDs), and approved safety analysis reports are considered to be adopted**

- **Continuing DOE participation in and review of adopted VCSs is required**

• DOE adopts VCSs by referencing them in policy statements, requirements documents (e.g., rules and orders), guides, contract documents, site/facility implementation plans, standards/requirements identification documents (S/RIDs), and DOE-approved sets of "work-smart" standards. Adopted VCSs are listed in DOE-TSL-1, *Department of Energy Standards Index*. The applicability of VCSs to DOE contractors is stipulated as part of Contractor Requirements Documents, S/RIDs, sets of "necessary and sufficient" (e.g., work-smart) standards incorporated in their contracts, and site/facility implementation plans. VCSs are also considered to be adopted when invoked by authorization basis documents (such as safety analysis reports) or if they are part of the "Code of Record" in facility design.

Participating in Non-Government Standards Development Organizations (SDOs)

- Public Law 104-113 and OMB Circular A-119 provide explicit guidance on participation.

- DOE Order 252.1 implements this guidance for DOE and provides for recording and reporting participations.

- Participations are reported annually to OMB.

- DOE and contractor participation in non-Government standards development organizations (SDOs) is encouraged under Federal and DOE policy. DOE and contractor personnel participating in SDOs should complete form DOE F 1300.2. The form serves to (1) record the number of DOE and contractor personnel participating in standards development/management activities for reporting to the Office of Management and Budget (in accordance with PL 104-113 and OMB Circular A-119) and (2) ensure that SDOs are supported by DOE when that support is deemed important to the Department's missions and activities.

- DOE-TSL-4, *Directory of DOE and Contractor Personnel Involved in Non-Government Standards Activities*, provides a listing of individuals participating in non-Government standards development organizations.

- Participation with SDOs on behalf of DOE by Federal and contractor personnel is documented annually in a report from the Secretary of Energy. The National Institute of Standards and Technology (NIST) consolidates the DOE report with those of other Federal agencies and forwards it to OMB for issue.

Why Non-Government Standards Development Organizations Want DOE Participation

- Provide balance of interest to standards bodies (i.e., government representing user interests)

- Guarantee sales of standards

- "Prestige" of DOE usage promotes acceptance and provides greater "legitimacy" to standards

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• For the set of voluntary consensus standards adopted for use by DOE, Departmental representation on the working group/committee of the non-Government standards development organization responsible for maintenance of the standard(s) is encouraged.

Why Have a Technical Standards Program?

- **PL 104-113 and Federal policy/requirements in OMB Circular A-119**

- **Uniform internal technical standards development system for DOE Federal and contractor organizations**

- **Necessary infrastructure for Federal and Government-owned/contractor-operated (GOCO) facilities and programs**

Why Have a Technical Standards Program?

- PL 104-113 and Federal policy/requirements in OMB Circular A-119
    - Establishes the means and responsibilities for DOE to conform with the Federal requirements related to technical standards established in PL 104-113, which codifies existing federal policy contained in OMB Circular A-119
- Uniform internal technical standards development system for DOE Federal and contractor organizations
    - Establishes a Department-wide system for managing technical standards activities and issues in a uniform, efficient and effective manner, for both DOE and contractor elements, versus separate systems for each DOE organization/contractor
- Necessary infrastructure for Federal and Government-owned/contractor-operated (GOCO) facilities and programs
    - Establishes a key component of the infrastructure necessary for the Department to conform with the "Criteria for the Department's Standards Program" (DOE/EH-0416) and with the technical standards portion of the Department Directives System

Why Have a Technical Standards Program?

- DNFSB 91-1 commitment
  - Implements commitments made to the DNFSB in response to DNFSB Recommendation 91-1, "Strengthen Nuclear Safety Standards Program" Technical standards must be accepted, technically valid documents produced by qualified and competent technical staff through a rigorous process.
- Technology transfer
  - Establishes the program as a principal path for the transfer of DOE's new and emerging technologies to U.S. industries
- Requirements Reduction
  - Controls and eliminates those requirements that are redundant with existing public law and Federal/DOE policy by:
    - Converting existing requirements to an outcome-oriented format
    - Consolidating essential requirements in a new format
    - Moving many of the "how" details to a program guide and implementing procedures
- Reflect Federal and National standards programs
  - Serves as the primary interface for DOE with standards management initiatives from the Federal government and from industry and national standards development organizations

How Does the Technical Standards Program Work?

- **Driven by Federal requirements**

- **Implemented via DOE requirements**

- **Managed in accordance with *DOE Technical Standards Program Procedures* (TSPPs)**

How Does the Technical Standards Program Work?

- Driven by Federal requirements
    - PL 104-113
    - OMB Circular A-119
- Implemented via DOE requirements
    - DOE P 251.1
    - DOE O 252.1
    - DOE G-252.1-1
- Managed in accordance with *DOE Technical Standards Program Procedures* (TSPPs)
    - Developed by Technical Standards Managers (TSMs) and the Technical Standards Program Office (TSPO)

DOE Technical Standards Program Procedures

- **DOE TSPP-1** *Technical Standards Program Responsibilities*

- **DOE TSPP-2** *Establishing the Need for a Technical Standard*

- **DOE TSPP-3** *Use of Non-Government Standards and Interaction with Non-Government Standards Bodies*

- **DOE TSPP-4** *Registering a Technical Standard Project*

- **DOE TSPP-5** *Development of a New DOE Technical Standard*

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- The TSPPs are maintained by the Technical Standards Program Office and approved by the Technical Standards Managers' Committee (TSMC). Copies of the TSPPs are available on the TSP Web site. (Note: the TSPO, the TSMC, and TSP Web site are discussed later in the tutorial.)

DOE Technical Standards Program Procedures (cont.)

- **DOE TSPP-6** *Coordination of DOE Technical Standards*
- **DOE TSPP-7** *DOE Technical Standards Comment Resolution*
- **DOE TSPP-8** *Approving and Issuing DOE Technical Standards*
- **DOE TSPP-9** *Maintenance of DOE Technical Standards*
- **DOE TSPP-10** *Conversion of DOE Technical Standards to Non-Government Standards*
- **DOE TSPP-11** *Technical Standards Program Topical Committees*

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How Does the Technical Standards Program Work?

- Program conducted by

  ☞ Technical Standards Program Manager

  ☞ Technical Standards Program Office

  ☞ Technical Standards Managers (TSMs)

  ☞ Technical Standards Managers' Committee (TSMC)

  ☞ Topical Committees (TCs)

How Does the Technical Standards Program Work?

- Program conducted by:
  - Technical Standards Program Manager
    - EH manages the DOE-wide program for all of DOE. It is coordinated with the DOE Standards Executive by the TSP Manager, who also chairs the TSMC.
  - Technical Standards Program Office
    - DOE/EH HQ in EH-53, Office of Nuclear and Facility Safety Policy
    - Oak Ridge National Laboratory (ORNL) support
  - Technical Standards Managers
    - ~ 80, counting designated alternates
  - Technical Standards Managers' Committee (TSMC)
    - ~ 40 participants from DOE/contractor organizations
    - Focus on program issues management
  - Topical Committees (TCs)
    - ~ 16 currently approved TCs (includes TRADE Special Interest Groups and existing DOE working groups)
    - Subject matter experts at HQ and DOE sites
    - TCs complement individual participations with standards development organizations

Technical Standards Manager

- **Each HQ, Field Office, and major site contractor is represented by a TSM who**

  - ☞ Acts as a single point-of-contact for resource information

  - ☞ Works with the organizations to develop and maintain technical standards

  - ☞ Coordinates proposed technical standards and consolidates comments

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- A Technical Standards Manager is usually a senior, experienced person that is appointed by the head of a DOE Component (DOE HQ or field organization or DOE contractor) and tasked with managing that organization's Technical Standards Program activities.

- TSMs represent their organization by assisting in technical standards development and issue identification. Concurrently, they represent the DOE Technical Standards Program by participating in development of the program Strategic Plan, TSPPs, and issue identification/resolution.

Technical Standards Managers' Committee

- **Provides a forum for discussing and resolving issues related to technical standards**

- **Develops processes and procedures for conducting DOE Technical Standards activities**

- **Provides assistance to DOE and contractor organizations during their development, review, and approval of proposed DOE Technical Standards**

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- The charter for the TSMC is provided in TSPP-1.
- The TSMC meets monthly via teleconference.
- Participation in the TSMC is one means by which both Federal and contractor TSMs can influence how the TSP focuses on business needs and how business is conducted.

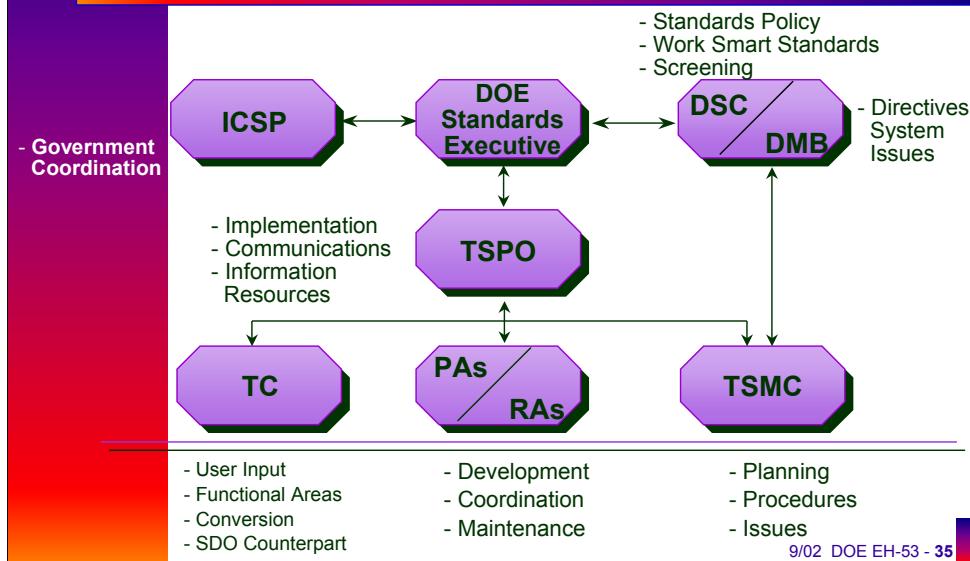## How Does the Technical Standards Program Work?

- **Topical Committee Chairs & Steering Committees**
    - ☞ Focus for DOE's subject matter experts
    - ☞ Coordinate with SDO counterparts
    - ☞ Survive "rightsizing" and reorganization
- **Routine program interfaces**
    - ☞ Web site
    - ☞ E-mail distribution

How Does the Technical Standards Program Work?

- Topical Committee Chairs & Steering Committees
    - ~ 26 currently approved TCs (includes TRADE Special Interest Groups and existing DOE working groups)
    - Subject matter experts at HQ and DOE sites
    - TCs complement individual participations with standards development organizations
    - Many TCs coordinate with other Federal agencies (e.g., NRC, DoD, NASA, NOAA) on standards activities. Also, some TCs include active representation from those agencies in their committee.
    - TCs enable technical groups to survive "rightsizing" and reorganization because members can maintain their participation. TCs help the TSP retain "corporate memory" when organizational changes occur.
- Routine program interfaces
    - DOE Technical Standards Program Web site
    - TSM e-mail
    - Distribution lists for publications

Technical Standards Program Interfaces

- The DOE Standards Executive is Richard Black, Director, Office of Nuclear and Facility Safety Policy (EH-53).

Acronyms used in the figure:

- DMB   Directives Management Board (currently inactive)
- DSC   Department Standards Committee (currently inactive)
- ICSP   Interagency Committee on Standards Policy
- PA   Preparing Activities
- RA   Review Activities
- TC   Topical Committees
- TSMC   Technical Standards Managers' Committee
- TSPO   Technical Standards Program Office

Selecting of Technical Standards

- **Voluntary Consensus Standards**
- **Government Standards**

- **DOE Standards (STD)**
- **DOE Specifications (SPEC)**
- **DOE Limited Standards and Specifications**

DOE Technical Information

- **DOE Handbooks (HDBK)**
- **DOE Technical Standards Lists (TSL)**

DOE Resource Information

DOE General Information

- In accordance with PL 104-113 and OMB Circular A-119, DOE organizations, sites, and facilities preferentially use existing, suitable voluntary consensus standards (also referred to as non-Government standards) for all DOE programs and applications. Once the need for a technical standard is identified, VCSs should be considered and used first; Government standards should be considered and used next; and, lastly, a DOE Technical Standard should be developed and used only when no adequate VCSs or Government standard either exists or can be developed on a schedule consistent with Department priorities. Also, in accordance with OMB Circular A-119, DOE gives preference to performance standards when such standards may reasonably be used in lieu of prescriptive standards.

- **NOTE -** "Industry standards" are also considered to be non-Government standards. However, the February 1998 revision to OMB Circular A-119 identifies industry standards as "non-consensus standards." Consortia standards are limited consensus standards developed by industry groups, often with proprietary interests.

- **NOTE -** Some national and international standards are developed using the canvass method. The continued use of the canvass method for developing U.S. voluntary consensus standards is currently being reviewed.

- Once the need for a DOE Technical Standard has been confirmed by line management, the document type that will best fill the need must also be determined. There are four types for DOE Technical Standards based on function and expected use.
  - DOE Standards (DOE-STD)*
  - DOE Specifications (DOE-SPEC)*
  - DOE Handbooks (DOE-HDBK)
  - DOE Technical Standards Lists (DOE-TSL)
    * Provisions exist for issuing limited documents (used by single program office)

Information in DOE Technical Standards

- **TSP guidance on the outline/sections for DOE Technical Standards is consistent with:**

  ☞ General Services Agreement (GSA)-Federal Supply Services (FSS) Federal Property Management Regulation (FPMR) 101-29 for Federal standardization documents

  ☞ MIL-STD-961 and MIL-STD-962 for military standardization documents

  ☞ American National Standards Institute (ANSI) *Style Manual for Preparation of Proposed American National Standards*

  ☞ ANSI/Standards Engineering Society (SES) *Recommended Practice for Standards Designation and Organization*

- The Technical Standards Program uses existing Federal and national formats for the development of DOE Technical Standards.
- Consistency with voluntary consensus standards and Federal standardization guidance in the organization and presentation of information facilitates the transfer of DOE-sponsored technology to the private sector through the conversion of DOE Technical Standards to voluntary consensus standards.
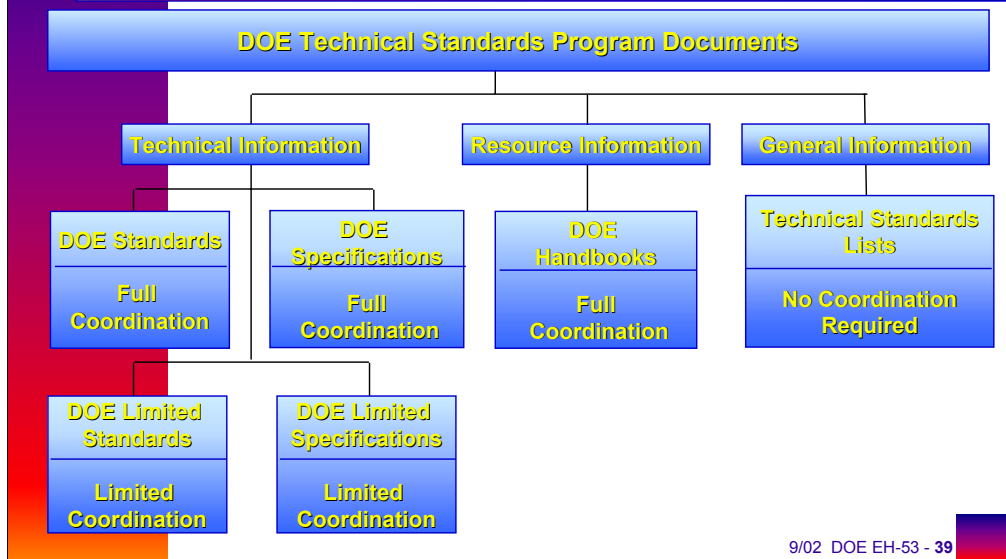
Assignment of Standards Project Numbers by TSPO

- **Assignment of project number indicates project initiation**

- **TSPO publishes information from the registration form in the "Standards Actions" newsletter to advise users of…**

  ☞ proposed new documents

  ☞ documents in coordination

  ☞ updates to existing documents

  ☞ approved documents

- Project numbers consist of two parts. The first part is the applicable Functional Area, Federal Supply Group (FSG), or Federal Supply Class (FSC). The second part is a four-digit number that is assigned serially by the Technical Standards Program Office. (Examples of project numbers: HFAC-0039, 63GP-0012, 6115-0049.) Functional Areas, FSGs, and FSCs are listed in DOE-TSL-2, *Directory of Points of Contact for the DOE Technical Standards Program*.

- After the project number has been assigned, the TSPO notifies the Preparing Activity and provides the assigned project number. In addition, the TSPO records the project in the Technical Standards Information System (TSIS) database and announces the project's initiation in *Standards Actions*.

- As a courtesy to our network of TSMs, the TSPO also sends an e-mail notice when new standards projects are identified.

Coordination of DOE Technical Standards Program Documents

DOE Technical Standards Program Documents

- **Technical Information**
  - **DOE Standards** — Full Coordination
    - **DOE Limited Standards** — Limited Coordination
  - **DOE Specifications** — Full Coordination
    - **DOE Limited Specifications** — Limited Coordination
- **Resource Information**
  - **DOE Handbooks** — Full Coordination
- **General Information**
  - **Technical Standards Lists** — No Coordination Required

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- Guidance on coordination of new or revised DOE Technical Standards is provided in DOE TSPP-6.

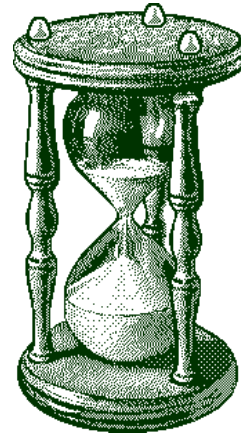**Coordinate DOE Technical Standards with Industry, When Appropriate**

IEEE   ASTM   ASME   ANSI   ANS

Preparing Activities should consider coordinating DOE Technical Standards (either being prepared or under revision) with non-Government standards development organizations. This coordination would facilitate the identification of available or emerging voluntary consensus standards that could meet DOE's needs in lieu of continuing the internal (i.e., DOE) standards development process. A listing of standards developing organizations can be found in the Department of Energy Standards Index, DOE-TSL-1, and on the DOE Technical Standards Program Web site.

Many DOE Topical Committees also have direct contacts with counterpart standards writing groups in voluntary consensus standards bodies. In this capacity, DOE Topical Committees can function to initiate a new voluntary consensus standard project on behalf of DOE.

Normal Coordination Time

- **60 days**

- **May be extended to accept late comments**

- **May be reduced under urgent conditions**

- A minimum of 60 days for full coordination documents and 30 days for limited coordination documents is allotted for return of comments on technical standards from the Review Activities, unless the senior line manager and the Technical Standards Manager agree upon a shorter coordination time to meet urgent schedules. The Preparing Activity may extend the coordination time to accept additional late comments.

- *NOTE:* **Prior to releasing a draft standard for comment with a reduced coordination time, the Preparing Activity should consult with the DOE Technical Standards Program Manager.**

- If additional time is needed, the Technical Standards Managers should discuss the need with the Preparing Activity. Other Review Activities who receive a copy of the document directly from the Preparing Activity should return their comments to the Preparing Activity.

- Again, as a courtesy to our network of TSMs, the TSPO sends an e-mail notice when draft versions of new or revised DOE Technical Standards are released for coordination.

Monitoring Technical Standards Projects

- TSM and TSPO must see all coordination drafts

- TSM and TSPO monitor to ensure timely completion

Options for Maintaining DOE Technical Standards

- **Revision**

- **Change Notice**

- **Reaffirmation**

- **Reaffirmation with Errata**

- **Inactive for New Design**

- **Cancellation**

- **Reinstatement**

- Guidance on the maintenance of DOE Technical Standards is provided in DOE TSPP-9.

Worldwide Access to DOE Technical Standards Program Information

- **DOE Technical Standards,** *DOE Technical Standards Program Procedures, DOE Standards Index,* **and** *Directory of DOE/Contractor Personnel Involved in Non-Government Standards Activities* **(PDF file)**

- **Listing of Technical Standards Managers**

- *The Standards Forum* **and** *Standards Actions*

- **Links to DOE Topical Committees and non-Government standards development organizations**

- **Web address: http://tis.eh.doe.gov/techstds/**

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Worldwide Access to DOE Technical Standards Program information is available through the Internet.

- DOE Technical Standards (can be browsed and printed)
- *DOE Technical Standards Program Procedures*
- DOE-TSL-1, *Department of Energy Standards Index*
- DOE-TSL-4, *Directory of DOE and Contractor Personnel Involved in Non-Government Standards Activities*
- Listing of DOE/contractor Technical Standards Managers
- Current and past issues of *The Standards Forum* and *Standards Actions*
- "Hot Links" to Internet sites of DOE Topical Committees and non-Government standards development organizations

Web Address:
http://tis.eh.doe.gov/techstds/

- Promotes the DOE use of voluntary consensus standards

- Assists DOE staff access to voluntary consensus standards (lists, summaries, copies)

- Provides standards management processes and serves DOE business needs

What Does the Technical Standards Program Do?

- Promotes the use of voluntary consensus standards within DOE to support Department access to private-sector technologies
- Assists DOE staff access to voluntary consensus standards (lists, summaries, copies)
  - Commercial access to voluntary consensus standards
  - Internet links to non-Government standards development organizations
  - Links to the ANSI National Standards System Network (NSSN) and DOE's Directives System
  - Links to Topical Committees & SDO counterparts
- Provides standards management processes for:
  - Screening proposed technical standards (TSs) for need and value-added
  - Identifying voluntary consensus standards suitable for use by DOE organizations
  - Developing, coordinating, approving, & issuing TSs
  - Printing & distributing TSs
  - Converting, revising, canceling, & reaffirming TSs
  - Participating in the interests of DOE in SDO activities
  - Controlling unauthorized ("rogue") documents

What Does the DOE Technical Standards Program Do?

- Posts approved and draft-for-comment DOE Technical Standards

- Recognizes Topical Committees & provides informational links to them

- Promotes technology transfer

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Technical Standards Program Business Areas

- **Policy and Program Development**

- **Technical Services**

- **Communications and Outreach**

- The activities of the Technical Standards Program are strategically defined, organized and conducted within the following major business areas:
    - Policy and Program Development
    - Technical Service
    - Communications and Outreach

Policy and Program Development

- Public Law 104-113

- OMB Circular A-119

- DOE Order & Guide 252.1

- TSP Strategic Plan & Program Plan

- TSP Procedures

Policy and Program Development

- Implementation of PL 104-113
  - Use voluntary consensus standards
  - Work with SDOs
- Implementation & revision of OMB Circular A-119
- DOE Order & Guide 252.1 development and issue
- TSP Strategic Plan and Program Plan
- TSP Procedures

Technical Services

- Technical Standards Program Web site information

- TSMC meetings

- Topical Committee meetings

- Program tutorials

- Management briefings

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Technical Services

- *Standards Actions* (monthly)
- *The Standards Forum* (quarterly)
- Technical Standards Lists
    - DOE-TSL-1 (DOE Standards Index)
    - DOE-TSL-4 (SDO Participation Directory)
- Internet access to DOE Technical Standards (approved and draft)
- Feedback
    - Respond to queries, comments, corrections, and assist in contacting preparing activity representatives when there are questions on DOE Technical Standards
    - Provide assistance in locating voluntary consensus standards

Technical Services

- Standards Developing Organizations links

- Topical Committee links

- DOE Standards Executive function (OMB Circular A-119 requirement)

Technical Services

- Standards Developing Organization links
- DOE Topical Committee links
- DOE Standards Executive function (OMB Circular A-119 requirement)

Communications and Outreach

- **Interagency Committee on Standards Policy (ICSP)**
- **DOE Technical Standards Program Web site/links to SDOs**
- **ANSI Government Member Council/Nuclear Standards Board**
- **DOE Technical Standards Program Workshops**
- **Industry/Government Conference Participation**
- **DOE/Nuclear Regulatory Commission (NRC)/SDO Coordination Meetings**

Communications and Outreach

- Interagency Committee on Standards Policy (ICSP)
    - The TSP coordinates standards activities with other Federal agencies through the ICSP and the DOE Standards Executive. (Activities have included Lab Accreditation, NACLA, and Standards Workshop.)
- DOE Technical Standards Program Web site/links to SDOs
- ANSI Government Member Council
- ANSI Nuclear Standards Board
- DOE Technical Standards Program Workshops
- Industry/Government Conference Participation (EPIC)
- DOE/Nuclear Regulatory Commission (NRC)/SDO Coordination Meetings

Summary

- The Technical Standards Program promotes the use of voluntary consensus standards within DOE by:
  - Implementing PL 104-113 and OMB Circular A-119
  - Providing Departmental management and infrastructure of technical standards activities
  - Serving as a forum for Federal and contractor personnel to identify and resolve issues related to the development, application, and maintenance of technical standards
- The TSP provides the means for DOE to internally develop needed technical standards.
- Technical Standards:
  - Help DOE to safely and reliably manage its facilities at reasonable cost
  - Make available to DOE the worldwide technologies of industries and governments
  - Provide a repository for international technical experience and knowledge
- The DOE Technical Standards Program links DOE to the world of standards.

What the TSP Can Do For You

- Provide standards information
- Post your standards on the Internet
- Increase your management's awareness of standards
- Provide pre-established guidance and electronic formats
- Identify personnel in non-Government standards development organizations for assistance

What the TSP Can Do For You

- Provide information searches for listings of topically related standards
- Post your standards on the Internet
- Increase your management's awareness of standards and standardization activities of potential relevance to your work
- Provide pre-established guidance and electronic formats for authoring, coordinating, and maintaining DOE Technical Standards
- Identify personnel in non-Government standards development organizations that can assist you in developing/revising voluntary consensus standards to meet your needs

What You Can Do For the TSP

- Register participation in voluntary consensus standards activities
- Contact your Technical Standards Manager
- Register "standards" products
- Keep informed through *Standards Actions* and *The Standards Forum*
- Learn more about standards by attending a Technical Standards Program workshop
- Query the DOE Technical Standards Program Web site
- Let us know how we can better support you and your organization

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What You Can Do For the TSP

- Register your participation in voluntary consensus standards activities
- Contact your Technical Standards Manager, confirm his/her support for your work, and schedule your participation in an upcoming site program briefing
- Register those products of our efforts that are "standards" and should be recognized under the DOE directives hierarchy
- Keep informed of current events in the world of standards through *Standards Actions* and *The Standards Forum*
- Attend a Technical Standards Program workshop to learn more about standards and strategic standardization initiatives that may affect you
- Query the DOE Technical Standards Program Web site for program information
- Let us know how we can better support you and your organization

DOE Technical Standards Can Be Obtained from ES&H Technical Information Services (TIS)

- **Call (800) 473-4375 to order copies of DOE Technical Standards.**

- **Local printing of the PDF files of the documents on the DOE TSP Web site is the recommended method for obtaining copies. (http://tis.eh.doe.gov/techstds/)**

ES&H TIS
ES&H Technical Information Services
EH-72/270 Corporate Center Building
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-0270

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- Call (800) 473-4375 to order copies of DOE Technical Standards.

- The recommended method for obtaining copies of DOE Technical Standards is local printing of the PDF files of the documents on the DOE TSP Web site. (http://tis.eh.doe.gov/techstds/)

Federal & Military Standardization Documents Are Available from...

Defense Printing Service Detachment Office

ATTN: Customer Service

700 Robbins Avenue, Bldg. 4D
    Philadelphia, PA 19111-5094

First time orders: call (215) 697-2179

Ordering information can also be obtained
    from the Internet address:
    http://www.dodssp.daps.mil/

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Voluntary Consensus Standards Are Available from…

If you need copies of voluntary consensus standards, contact the SDO and get them for yourself, or go to your library and get them through CD-ROM or microfiche.

Most voluntary consensus standards may be obtained from the American National Standards Institute, 25 West 43rd St., New York, NY 10036 212-642-4900, http://web.ansi.org/

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